

RD AN No. 3701 (1924-A)
January 28, 2002

TO: Rural Development State Directors
Rural Development Managers
Community Development Managers

ATTN: All Rural Housing Staff, State Architects, Engineers,
Construction Analysts and Inspectors

FROM: James C. Alsop *(Signed by James C. Alsop)*
Acting Administrator
Rural Housing Service

SUBJECT: Thermal Requirements for Manufactured Housing

PURPOSE/INTENDED OUTCOME:

The purpose of this Administrative Notice (AN) is to inform the Rural Development staff of the Uo Value Zones (thermal requirements) in the Federal Manufactured Home Construction and Safety Standards (FMHCSS), commonly called the HUD Code, are acceptable to Rural Development for new manufactured homes financed by the Agency. This AN also clarifies the requirements in RD Instruction 1924-A, Exhibit D and HB 1-3550.

COMPARISON WITH PREVIOUS AN:

This is a reissue of RD AN 3508 (1924-A), dated January 20, 2000, which expired December 31, 2000.

BACKGROUND:

On September 2, 1999, the Rural Housing Service (RHS) amended its thermal requirements for manufactured homes. The review and approval process is now streamlined when a home has been built for a HUD zone that meets or exceeds RHS's thermal requirements for the area in which the

EXPIRATION DATE:
January 31, 2003

FILING INSTRUCTIONS:
Preceding RD Instruction 1924-A

home is to be located. This will reduce the burden on Rural Development field personnel, the manufactured housing industry, and most importantly Rural Development customers.

New manufactured homes built to the FMHCSS are provided with a Comfort Heating and Cooling Certificate. The Comfort Heating Certification (which may be combined with the Data Plate) is affixed in a permanent manner near the main electrical panel or other readily accessible and visible location inside the unit. The Certificate specifies the FMHCSS Uo Value Zone that the manufactured home complies with (see the circled area on Attachment A). This will be either a Uo Value Zone 1, 2, or 3. Attachment A is an example of a Data Plate containing the Comfort Heating and Cooling Certificate. The U/O Value Zone Map on the certificate does not apply to Rural Development.

IMPLEMENTATION RESPONSIBILITIES:

The former practice of submitting thermal design data on a particular manufactured home model to Rural Development for review and approval, and installation of a separate Rural Development thermal sticker in the unit is discontinued. Please reference the Special Procedure Notice issued on October 4, 1999.

Attachment B to this AN lists the FMHCSS Uo value zones that correspond to the RHS climatic zones for each State by county. These are the FMHCSS Uo Value Zones acceptable to Rural Development for each State or counties within a State. RHS field offices will ensure that existing and potential manufactured housing dealer-contractors receive Attachment B that contains the FMHCSS Uo Value Zones acceptable to Rural Development.

During the initial interview with the applicant, Rural Development staff will indicate which FMHCSS Uo Value Zone is acceptable to Rural Development. When the manufactured home is delivered to the site, Rural Development will verify that the unit FMHCSS Uo Value Zone meets or exceeds what is acceptable to Rural Development by inspecting the Comfort Heating Certification.

Please direct all questions pertaining to this AN to Sam Hodges, Architect, Program Support Staff at (202) 720-9653.

Attachments

Manufacturer Address

Attachment A

COMFORT HEATING

This manufactured home has been thoroughly insulated to conform with the requirements of the federal manufactured home construction and safety standards for all localities within 1100 ft. of a water body. It is recommended that the heating equipment manufacturer and model (see list at left). The above heating equipment has the capacity to maintain an average 70° F temperature in this home at outdoor temperatures of _____ °F. To maximize furnace operating economy, and to conserve energy, it is recommended that this home be installed where the outdoor winter design temperature (R.S. 1-25) is not higher than _____ degrees Fahrenheit. The above information has been calculated assuming a maximum wind velocity of 15 mph at standard atmospheric pressure.

COMFORT COOLING

☐ Air conditioner provided at factory (alternate I)

Air conditioner manufacturer and model (see list at left).

Certified capacity _____ B.T.U./hour in accordance with the appropriate air conditioning and refrigeration institute standards. The central air conditioning system provided in this home has been sized season or orientation of the front (fitch end) of the home facing _____ On this basis the system is designed to maintain an indoor temperature of 75° F when outdoor

temperatures are _____ °F dry bulb and _____ °F wet bulb.

The temperature to which this home can be cooled will change depending upon the amount of exposure of the windows of this home to the sun's radiant heat. Therefore, the home's peak gains will vary depending upon its orientation to the sun and any permanent shading provided. Information concerning the calculation of cooling loads at various locations, window exposures and shadings are provided in Chapter 22 of the 1983 edition of the ASHRAE Handbook of Fundamentals.

Information necessary to calculate cooling loads at various locations and orientations is provided in the special comfort cooling information provided with this home.

☐ Air conditioner not provided at factory (Alternate II)

The air distribution system of this home is suitable for the installation of central air conditioning.

The supply air distribution system installed in this home is sized for a manufactured home central air conditioning system of up to _____ B.T.U./hr rated capacity which are certified in accordance with the appropriate air conditioning and refrigeration institute standards, when the air conditioners of such air conditioners are rated at 2.0 inch water column static pressure or greater for the cooling air delivered to the manufactured home supply air duct system. Information necessary to calculate cooling loads at various locations and orientations is provided in the special comfort cooling information provided with this manufactured home.

☐ Air conditioning not recommended (Alternate III)

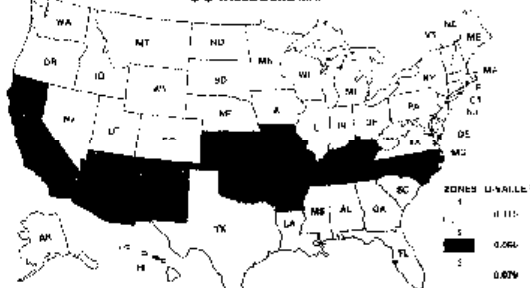
The air distribution system of this home has not been designed in anticipation of its use with a central air conditioning system.

To determine the required capacity of equipment to cool a home efficiently and economically a cooling load heat gain calculation is required. The cooling load is dependent on the orientation, location and the structure of the home. Central air conditioners operate most efficiently and provide the greatest comfort when their capacity closely approximates the calculated cooling load. Each home's air conditioner should be sized in accordance with Chapter 22 of the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Handbook of Fundamentals 1983 edition, once the location and orientation are known.

INFORMATION PROVIDED BY THE MANUFACTURER NECESSARY TO CALCULATE VEHICLE HEAT GAIN

Worst installed windows and doors _____ U _____
Ceiling and walls of light color _____ U _____
Ceiling and walls of dark color _____ U _____
Floors _____ U _____
Air ducts in floor _____ U _____
Air ducts in ceiling _____ U _____
Air ducts installed outside the home _____ U _____
The following are the duct areas in this home:
Air ducts in floor _____ sq. ft.
Air ducts in ceiling _____ sq. ft.
Air ducts installed outside the home _____ sq. ft.

U-VALUE ZONE MAP



ED-49 © 1984 AIA Inc. REV 10/84

Plant Number

Date of Manufacture HUD Label No.(s)

Manufacturer's Serial Number and Model Unit Designation

Design Approval by (D.A.P.A.)

This manufactured home is designed to comply with the federal manufactured home construction and safety standards in force at time of manufacture.
(For additional information, consult owner's manual.)

The factory installed equipment includes:

| Equipment | Manufacturer | Model Designation |
|------------------|--------------|-------------------|
| For heating | | |
| For air cooling | | |
| For cooking | | |
| Refrigerator | | |
| Water Heater | | |
| Washer | | |
| Clothes Dryer | | |
| Dishwasher | | |
| Garbage Disposal | | |
| Fireplace | | |

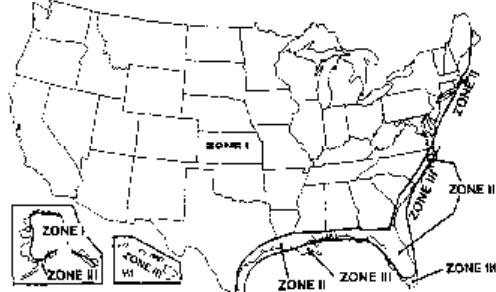
HOME CONSTRUCTED FOR

☐ Zone I ☐ Zone II ☐ Zone III

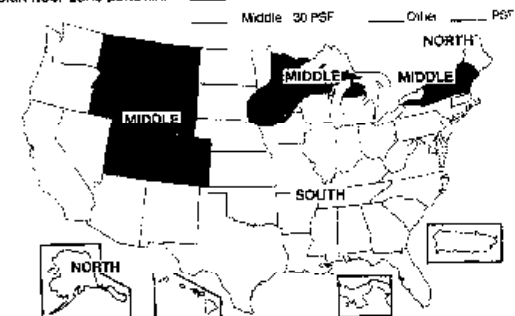
This home has not been designed for the higher wind pressure and anchoring provisions required for oceanfront areas and should not be located within 1500' of the coastline in Wind Zones II and III, unless the home and its anchoring and connection system have been designed for the increased requirements specified for Exposure D in ANSI A301-86.

This home has _____ has not _____ been equipped with storm shutters or other protective coverings for windows and exterior door openings. For homes designed to be located in Wind Zones II and III, which have not been provided with shutters or equivalent covering devices, it is strongly recommended that the home be made ready to be equipped with these devices in accordance with the method recommended in manufacturer printed instructions.

SAFETY WIND ZONE MAP



DESIGN ROOF LOAD ZONE MAP



**RURAL DEVELOPMENT
THERMAL REQUIREMENTS
FOR
MANUFACTURED HOMES**

BACKGROUND: The minimum thermal requirement for new manufactured homes acceptable to Rural Development is the Federal Manufactured Home Construction and Safety Standard (FMHCSS) Uo Value Zone(s) indicated on the Comfort Heating and Cooling Certificate for the following Rural Development States Offices:

NOTE: For a FMHCSS Uo Value Zone 1 or higher, higher means a FMHCSS Uo Value Zone 2 or 3. For a FMHCSS Uo Value Zone 2 or higher, higher means a FMHCSS Uo Value Zone 3.

ALABAMA

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

ALASKA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

ARIZONA

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|---------|----------|--------|------------|
| Cochise | Greenlee | Mohave | Santa Cruz |
| Gila | La Paz | Pima | Yuma |
| Graham | Maricopa | Pinal | |

FMHCSS Uo Value Zone 3 is acceptable for the following counties:

| | | | |
|--------|----------|--------|---------|
| Apache | Coconino | Navajo | Yavapai |
|--------|----------|--------|---------|

ARKANSAS

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

CALIFORNIA

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|--------------|-------------|-----------------|------------|
| Alameda | Kern | Riverside | Shasta |
| Amador | Kings | Sacramento | Solano |
| Butte | Lake | San Benito | Sonoma |
| Calaveras | Los Angeles | San Bernardino | Stanislaus |
| Coluas | Madera | San Diego | Sutter |
| Contra Costa | Marin | San Francisco | Tehama |
| Del Dorado | Mariposa | San Joaquin | Trinity |
| Fresno | Mendocino | San Luis Obispo | Tulare |
| Glenn | Merced | San Mateo | Tuolumne |
| Humboldt | Monterey | Santa Barbara | Ventura |
| Imperial | Napa | Santa Cruz | Yolo |
| Inyo | Orange | Santa Clara | Yuba |
| | Placer | | |

FMHCSS Uo Value Zone 3 is acceptable for the following counties:

| | | | |
|--------|-------|--------|----------|
| Alpine | Modoc | Nevada | Sierra |
| Lassen | Mono | Plumas | Siskiyou |

COLORADO

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

DELAWARE / MARYLAND

FMHCSS Uo Value Zone 3 is acceptable for all counties in both States.

FLORDIA / VIRGIN ISLANDS

FMHCSS Uo Value Zone 1 or higher is acceptable for the following Flordia counties and the Virgin Islands:

| | | | |
|-----------|--------------|------------|------------|
| Brevard | Hardee | Levy | Palm Beach |
| Broward | Hendry | Manatee | Pasco |
| Charlotte | Hernado | Marion | Pinellas |
| Citrus | Highlands | Martin | Polk |
| Collier | Hillborough | Monroe | Sarasota |
| Dade | Indian River | Okeechobee | Seminole |
| De Doto | Lake | Orange | St Lucia |
| Glades | Lee | Osceola | Sumter |
| | | | Vousia |

FMHCSS Uo Value Zone 2 or higher is acceptable for the following Flordia counties:

| | | | |
|----------|----------|-----------|------------|
| Alachua | Escambia | Jackson | Santa rosa |
| Baker | Flagler | Jefferson | St Johns |
| Bay | Franklin | Lafayette | Suwannee |
| Braford | Gadsden | Leon | Taylor |
| Calhoun | Gilhrst | Liberty | Union |
| Clay | Gulf | Madison | Wakulla |
| Columbia | Hamilton | Nassau | Walton |
| Dixie | Holmes | Okaloosa | Washington |
| Duval | | Putnam | |

GEORGIA

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

HAWAII

FMHCSS Uo Value Zone 1 or higher is acceptable for all counties in the State.

IDAHO

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

ILLINOIS

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

INDIANA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

IOWA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

KANSAS

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|------------|----------|------------|--------|
| Barber | Cowley | Harper | Neosho |
| Chautauqua | Crawford | Labette | Sumner |
| Cherokee | Elk | Montgomery | Wilson |
| Comanche | | | |

FMHCSS Uo Value Zone 3 is acceptable for the following counties:

| | | | |
|-----------|-------------|--------------|------------|
| Allen | Geary | Lyon | Riley |
| Anderson | Gove | Marion | Rooks |
| Atchison | Graham | Marshall | Rush |
| Barton | Grant | Mcpherson | Russell |
| Bourbon | Gray | Meade | Saline |
| Brown | Greeley | Miami | Scott |
| Bulter | Greenwood | Mitchell | Sedgwick |
| Chase | Hamilton | Morris | Seward |
| Cheyenne | Harvey | Morton | Shawnee |
| Clark | Haskell | Nemaha | Sheridan |
| Clay | Hodgeman | Ness | Sherman |
| Cloud | Jackson | Norton | Smith |
| Coffey | Jefferson | Osage | Stafford |
| Decatur | Jewell | Osborne | Stanton |
| Dickinson | Johnson | Ottawa | Stevens |
| Doniphan | Kearny | Pawnee | Thomas |
| Douglas | Kingman | Phillips | Trego |
| Edward | Kiowa | Pottawatomie | Wabaunsee |
| Ellis | Lane | Pratt | Wallace |
| Ellsworth | Leavenworth | Rawlins | Washington |
| Finney | Lincoln | Reno | Wichita |
| Ford | Linn | Republic | Woodson |
| Franklin | Logan | Rice | Wyandotte |

KENTUCKY

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

LOUISIANA

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

MAINE

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

MASSACHUSETTS / RHODE ISLAND / CONNECTICUT

FMHCSS Uo Value Zone 3 is acceptable for all counties in the three States.

MICHIGAN

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

MINNESOTA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

MISSISSIPPI

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

MISSOURI

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|----------------|-------------|----------|----------|
| Barry | Jasper | Newton | Scott |
| Bulter | Mcdonald | Oregon | Stoddard |
| Cape Girardeau | Mississippi | Ozark | Stone |
| Dunklin | New Madrid | Pemiscot | Taney |
| Howell | | Ripley | |

FMHCSS Uo Value Zone 3 is acceptable for the following counties:

| | | | |
|-----------|-----------|------------|---------------|
| Adair | Crawford | Lawrence | Putnam |
| Andrew | Dade | Lewis | Ralls |
| Atchison | Dallas | Lincoln | Randolph |
| Audrain | Daviess | Linn | Ray |
| Barton | De Kalb | Livingston | Reynolds |
| Bates | Dent | Macon | Saline |
| Benton | Douglas | Madison | Schuyler |
| Bollinger | Franklin | Maries | Scotland |
| Boone | Gasconade | Marion | Shannon |
| Buchanan | Gentry | Mercer | Shelby |
| Caldwell | Greene | Miller | St Charles |
| Callaway | Grundy | Moniteau | St Clair |
| Camden | Harrison | Monroe | St Francois |
| Carroll | Henry | Montgomery | St Louis |
| Carter | Hickory | Morgan | Ste Genevieve |
| Cass | Holt | Nodaway | Sullivan |
| Cedar | Howard | Osage | Texas |
| Chariton | Iron | Perry | Vernon |
| Christian | Jackson | Pettis | Warren |
| Clark | Jefferson | Phelps | Washington |
| Clay | Johnson | Pike | Wayne |
| Cllinton | Knox | Platte | Webster |
| Cole | Laclede | Polk | Worth |
| Cooper | Lafayette | Pulaski | Wright |

MONTANA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

NEBRASKA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

NEVADA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

NEW JERSEY

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

NEW MEXICO

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|------------|-----------|---------|-----------|
| Bernalillo | Eddy | Lea | Quay |
| Chaves | Grant | Lincoln | Roosevelt |
| Curry | Guadalupe | Luna | Sierra |
| De Baca | Hidalgo | Otero | Socorro |
| Dona Ana | | | |

FMHCSS Uo Value Zone 3 is acceptable for the following counties:

| | | | |
|---------|------------|------------|----------|
| Catron | Los Alamos | San Juan | Taos |
| Cibola | Mckinley | San Miguel | Torrance |
| Colfax | Mora | Sandoval | Union |
| Harding | Rio Arriba | Santa Fe | Valencia |

NEW YORK

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

NORTH CAROLINA

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

NORTH DAKOTA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

OHIO

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

OKLAHOMA

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|-----------|-----------|-----------|--------------|
| Adair | Dewey | Le Flore | Pawnee |
| Alfalfa | Ellis | Lincoln | Payne |
| Atoka | Garfield | Logan | Pittsburg |
| Beckham | Garvin | Love | Pontotoc |
| Blaine | Garday | Major | Pottawatomie |
| Bryan | Grant | Marshall | Pushmataha |
| Caddo | Greer | Mayes | Roger Mills |
| Canadian | Harmon | Mcclain | Rogers |
| Carter | Harper | Mccurtain | Seminole |
| Cherokee | Haskell | Mcintosh | Sequoyah |
| Choctaw | Hughes | Murray | Stephens |
| Cleveland | Jackson | Muskogee | Tillman |
| Coal | Jefferson | Noble | Tulsa |
| Comancha | Johnston | Nowata | Wagoner |
| Cotton | Kay | Okfuskee | Washington |
| Craig | Kingfish | Oklahoma | Washita |
| Creek | Kiowa | Okmulgee | Woods |
| Custer | Latimer | Osage | Woodward |
| Delaware | | Ottawa | |

FMHCSS Uo Value Zone 3 is acceptable for the following counties:

| | | |
|--------|----------|-------|
| Beaver | Cimarron | Texas |
|--------|----------|-------|

OREGON

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

PENNSYLVANIA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

PUERTO RICO

FMHCSS Uo Value Zone 1 or higher is acceptable for all of Puerto Rico.

SOUTH CAROLINA

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

SOUTH DAKOTA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

TENNESSEE

FMHCSS Uo Value Zone 2 or higher is acceptable for all counties in the State.

TEXAS

FMHCSS Uo Value Zone 1 or higher is acceptable for the following counties:

| | | | |
|---------|---------|---------|--------|
| Cameron | Kenedy | Starr | Zapata |
| Hidalgo | Kleberg | Willacy | |

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|-----------|---------------|-----------|------------|
| Anderson | Camp | Dickens | Guadalupe |
| Andrews | Carson | Dimmit | Hale |
| Angelina | Cass | Donley | Hall |
| Aransas | Castro | Duval | Hamilton |
| Archer | Chambers | Eastland | Hansford |
| Armstrong | Cherokee | Ector | Hardemen |
| Atascosa | Childress | Edwards | Hardin |
| Austin | Clay | El Paso | Harris |
| Bailey | Cochran | Ellis | Harrison |
| Bandera | Coke | Erath | Hartley |
| Bastrop | Coleman | Falls | Haskell |
| Baylor | Collin | Fannin | Hays |
| Bee | Collingsworth | Fayette | Hemphill |
| Bell | Colorado | Fisher | Henderson |
| Bexar | Comal | Floyd | Hill |
| Blanco | Comanche | Foard | Hockley |
| Borden | Concho | Fort Bend | Hood |
| Bosque | Cooke | Franklin | Hopkins |
| Bowie | Coryell | Freestone | Houston |
| Brazoria | Cottle | Frio | Howard |
| Brazos | Crane | Gaines | Hudspeth |
| Bewster | Crockett | Galveston | Hunt |
| Briscoe | Crosby | Garza | Hutchinson |
| Brooks | Culberson | Gillespie | Irion |
| Brown | Dallam | Glasscock | Jack |
| Burleson | Dallas | Goliad | Jackson |
| Burnet | Dawson | Gonzales | Jasper |
| Caldwell | De Witt | Gray | Jeff Davis |
| Calhoun | Deaf Smith | Grayson | Jefferson |
| Callahan | Delta | Gregg | Jim Hogg |
| Cameron | Denton | Grimes | Jim Wells |

TEXAS (continued)

FMHCSS Uo Value Zone 2 or higher is acceptable for the following counties:

| | | | |
|-----------|-------------|---------------|--------------|
| Johnson | Maverick | Randall | Terrell |
| Jones | Mcculloch | Reagan | Terry |
| Karnes | Mclennan | Real | Throckmorton |
| Kaufman | Mcmullen | Red River | Titus |
| Kendall | Medina | Reeves | Tom Green |
| Kent | Menard | Refugio | Travis |
| Kerr | Midland | Roberts | Trinity |
| Kimble | Milam | Robertson | Tyler |
| King | Mills | Rockwall | Upshur |
| Kinney | Mitchell | Runnels | Upton |
| Knox | Montague | Rusk | Uvalde |
| La Salle | Montgomery | Sabine | Val Verde |
| Lamar | Moore | San Augustine | Van Zandt |
| Lamb | Morris | San Jacinto | Victoria |
| Lampasas | Motley | San Patricio | Walker |
| Lavaca | Nacogdoches | San Saba | Waller |
| Lee | Navaro | Schleicher | Ward |
| Leon | Newton | Scurry | Washington |
| Liberty | Nolan | Shackelford | Webb |
| Limestone | Nueces | Shelby | Wharton |
| Lipscomb | Ochiltree | Sherman | Wheeler |
| Live Oak | Oldham | Smith | Wichita |
| Llano | Orange | Somervall | Wilbarger |
| Loving | Palo Pinto | Starr | Williamson |
| Lubbock | Panola | Stephens | Wilson |
| Lynn | Parker | Sterling | Winkler |
| Madison | Parmer | Stonewall | Wise |
| Marion | Pecos | Sutton | Wood |
| Martin | Polk Potter | Swisher | Yoakum |
| Mason | Presidio | Tarrant | Yonag |
| Matagorda | Rains | Taylor | Zavala |

UTAH

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

VERMONT / NEW HAMPSHIRE

FMHCSS Uo Value Zone 3 is acceptable for all counties in both States.

VIRGINIA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

WASHINGTON

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

WEST VIRGINIA

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

WISCONSIN

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.

WYOMING

FMHCSS Uo Value Zone 3 is acceptable for all counties in the State.